AP/IB Environmental Homework.

We don’t have a textbook yet, but no biggie. Please use any available resource to thoughtfully answer these questions using complete sentences. Thank you. **Bold faced terms** are necessary vocabulary.

1. “Energy flows but nutrients cycle. “Draw a system to illustrate this statement.
2. State the equations for **photosynthesi**s and **respiration** in words.
3. What are **autotrophs**  and **heterotrophs?**
4. What four things can happen to light energy striking leaves?
5. State the **first law of thermodynamics**, How does it apply to ecosystems?
6. Explain with a diagram **and** an equation the relationship between **gross productivity (GPP),** and **net productivity (NPP).**
7. Explain, with an equation, what all **consumers** do with the food that they ingest.
8. Fill in the missing words in the passage below.

Energy enters ecosystems as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy. Only 1-4% of this energy is trapped by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and converted into and stored as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy by the process of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. In this process, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy is transformed into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.

Plants use only a little of incoming solar radiation (**insolation)** and most of this is either reflected from the surfaces of leaves, absorbed by leaf cells to warm up leaves, or is transmitted through them. The total amount of energy fixed by plants is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Plants will use some of this energy for various life processes, e.g. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and respiration. Respiration is the process of breaking down food to release \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Some of the energy in every energy transformation is lost to the environment in the form of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy. Another term for this lost energy is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.